

Range extension for Buff-fronted Owl *Aegolius harrisii* in south-east Brazil

by Flávio Kulaif Ubaid, Fábio Maffei, Guilherme Marson Moya & Reginaldo José Donatelli

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SUMMARY.—Buff-fronted Owl *Aegolius harrisii* is a poorly known species. Field records are rare and sparse, with large gaps throughout its distribution. We present five new records of *A. harrisii* in south-east Brazil, in the states of São Paulo and Minas Gerais, and the second ever nest description. In São Paulo, records from Franca are >300 km from previous records, while the new record in Minas Gerais is 600 km from the only previous state record. More nocturnal field work is required to better evaluate the true distribution of *A. harrisii*.

Little is known concerning the behaviour and precise range of the widely distributed Buff-fronted Owl *Aegolius harrisii* (König *et al.* 2009). Its main characters include: pale buff face and underparts, dark upperparts, black lines separating the neck and face and two dark bands connecting the eyes and crown, brown tail with two white-spotted bars, several large buffish-ochre spots on the scapulars, and wings with round whitish spots (Antas 2009, König *et al.* 2009). It inhabits open woodland including *cerrado* and *caatinga* (Girão & Albano 2010), stunted sandy-belt woodland in Minas Gerais, Bahia and Ceará (A. Whittaker pers. obs.) and forest edges (Sick 1997). There are reports from seasonally flooded forests near watercourses (Santos 2009) and human-altered landscapes, e.g. orchards (Marks *et al.* 1999) and pine plantations (Ribas & Santos 2007, Santos 2009). Although found from sea level to 3,800 m in the Andes (Marks *et al.* 1999), field records are scarce and fragmented, and the species is poorly represented in collections. Knowledge of its range and biology are hindered by its inconspicuous habits (Girão & Albano 2010).

Seven records of *A. harrisii* exist from south-east Brazil: one from Minas Gerais, in Januária municipality (Whittaker 2004) and six from São Paulo as follows. Two specimens at Museu Zoologia de Universidade de São Paulo are from the municipality of Osasco and an unknown locality (Willis & Oniki 2003, Ribas & Santos 2007), with two records (2001 and 2002) from Intervales State Park, Ribeirão Grande, one in 2006 at Mogi das Cruzes (Ribas & Santos 2007) and most recently at a privately owned reserve (Parque de Zizo) in the municipalities of Tapiraí / São Miguel Arcanjo (Lima & Salles 2008).

Buff-fronted Owl is not on the list of threatened species in Minas Gerais (Machado *et al.* 1998), which was published prior to the record by Whittaker (2004). For São Paulo, it is listed as Data Deficient (Silveira *et al.* 2009) due to the lack of available information on which to base a categorisation. Here, we report new locations for Buff-fronted Owl in south-east Brazil, including a nest description and habitat information.

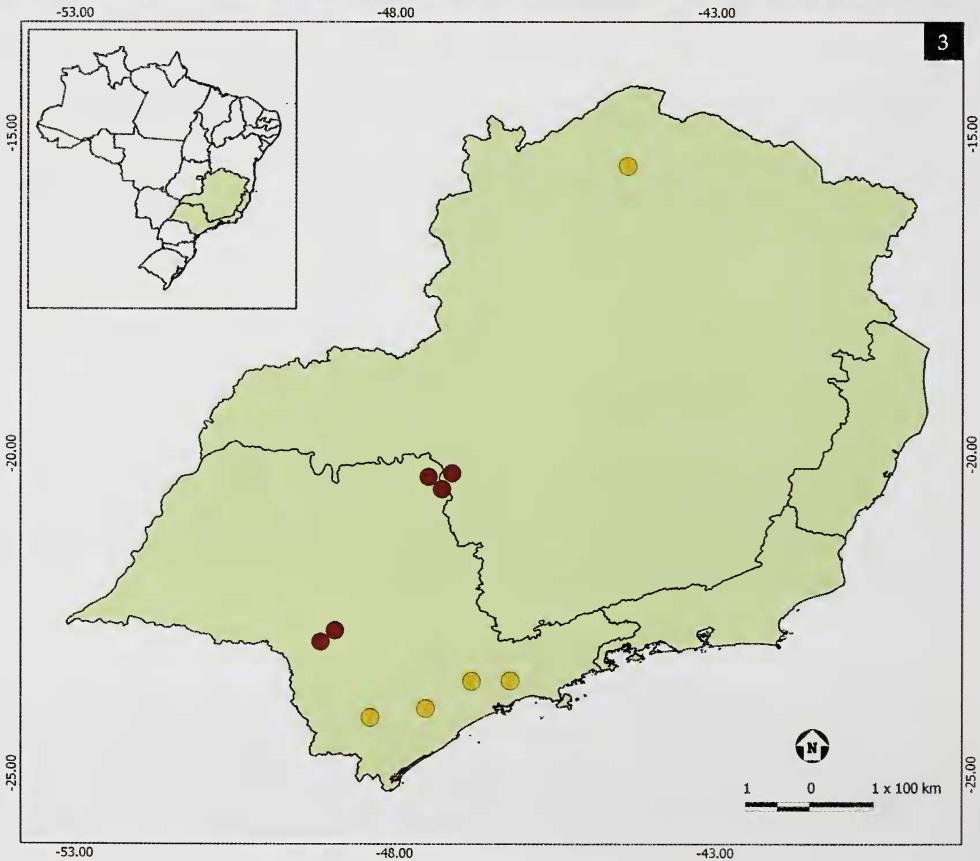
Field work

Nocturnal bird surveys were conducted monthly between November 2007 and December 2009, with c.3 nights of sampling per month, in the municipalities of Lençóis Paulista, Avaré and Borebi, in São Paulo. Following this, each area and new localities were surveyed quarterly, including northern São Paulo and southern Minas Gerais. Sampling consisted of visits to main forest remnants at dusk/night, for c.3 three hours per night. We

Figure 1. Riparian forest edge, rio Palmital, Avaré, São Paulo, Brazil (F. K. Ubaid)

Figure 2. Buff-fronted Owl *Aegolius harrisii*, Fazenda Rio Pardo II, Avaré, São Paulo, Brazil, 22 June 2011 (F. K. Ubaid)

Figure 3. Records of Buff-fronted Owl *Aegolius harrisii* in south-east Brazil: yellow circles = historical records; red circles = present study.



used playback of the song to search for *A. harrisii*. Sound-recordings were made using a Marantz PMD-661 solid state recorder and Sennheiser ME-67 microphone. Areas sampled comprised a mosaic of *cerrado* and semi-deciduous and riparian forests, some being seasonally flooded.

New records

On 29 September 2008, the vocalisation of *A. harrisii* was recorded at a forest beside a watercourse at Fazenda Rio Claro, municipality of Lençóis Paulista (22°47'03"S, 48°54'09"W; 650 m). The bird vocalised twice, at c.23.00 h, but was not seen. A new record was obtained on 22 June 2011 at Fazenda Rio Pardo II, municipality of Avaré (22°50'47"S, 48°58'44"W; 640 m), on the left bank of the rio Palmital (Fig. 1), 6 km south-west of the previous site. Vocal activity from this individual (Fig. 2) commenced early evening (c.19.00 h) and continued regularly until the observers left at c.02.00 h. Recordings have been archived at the Macaulay Library of Natural Sounds (MLNS 165198) and Fonoteca Neotropical Jacques Vielliard (FNJV 12056). Two birds responded to playback. One, possibly a male by its smaller size, behaved aggressively, vocalising more frequently and for longer, and flying close to the sound source. We also discovered a nest, strongly defended by the same bird. It was in a hollow trunk of an unidentified dead palm, 9 m above ground and measured 40.5 cm deep, with an entrance hole 10.5 cm by 8.5 cm wide, 9 m above ground. The cavity's base was covered with wood chips, owl feathers and the carcass of a small headless rodent (*Oligoryzomys* sp.).

On 8 September 2011, the pair was recorded again, displaying the same aggressive behaviour to playback. Tropical Screech Owl *Megascops choliba* and Barn Owl *Tyto alba* were recorded nearby. Both sites are enclosed by *Eucalyptus* plantations (c.15 m tall) with no understorey and small patches of *cerrado* and *cerradão* connected by riparian forest corridors.

A. harrisii was recorded at two localities in Franca (20°31'S, 47°15'W; 20°32'S, 47°08'W), northern São Paulo, and in Ibiraci (20°16'S, 47°05'W), southern Minas Gerais (D. Fernando pers. comm.). At both localities, only sound-recordings (FNJV 12870: Franca, FNJV 12871: Ibiraci) are available as documentation due to the dense vegetation. A pair of Mottled Owls *Strix virgata* was also recorded at one of the Franca sites. Great Horned Owl *Bubo virginianus*, Ferruginous Pygmy Owl *Glaucidium brasilianum* and Tropical Screech Owl were present in the Ibiraci fragment.

Discussion

Our records fill a considerable gap in the known range of *A. harrisii* in south-east Brazil (Fig. 3). The records from inland São Paulo are c.155 km from the nearest locality (Ribeirão Grande), while those from Franca are >300 km away from any previous locality. Ibiraci lies c.600 km away from the record at Januária, Minas Gerais.

It appears that Buff-fronted Owl inhabits small *cerrado* fragments, with a mosaic of riparian forests, and plantations of pine and eucalyptus, suggesting that the species can tolerate some level of habitat change. In the Serra de Misiones, Argentina, decline has been associated with deforestation (König 1999) and Silveira *et al.* (2009) cited forest loss as the main threat to birdlife in São Paulo, although this is apparently not the main reason for the few records of *A. harrisii*. In Franca, the species was recorded in a very small fragment (20 ha) enclosed by pasture and coffee plantations. Conversely, Buff-fronted Owl has been recorded in a large, well-preserved Atlantic Forest remnant (Lima & Salles 2008).

Girão & Albano (2010) concluded that Buff-fronted Owl might be more inconspicuous than rare. As in our study, several hours of nocturnal observations at other known locations

failed to produce further records. The few records might result from other factors, e.g. the activity of *A. h. dabbeni* (in north-west Argentina) was determined by that of certain bat species on which it feeds (Barrionuevo *et al.* 2008). Similarly, Girão & Albano (2010) argued that the sparse records of *A. harrisii* in Ceará, north-east Brazil, might be related to fluctuations in bat populations, although this requires confirmation. It is possible that the species has a preferred vocalisation period, as is the case for Boreal *A. funereus* and Northern Saw-whet Owls *A. acadicus* (Clark & Anderson 1997). The other Neotropical member of the genus, Unspotted Saw-whet Owl *A. ridgwayi* is also extremely poorly known and very infrequently heard (A. Whittaker pers. obs.), though like *A. harrisii* it sometimes vocalises by day (G. M. Kirwan *in litt.* 2012). Other explanations for the paucity of records include the possibility of altitudinal and / or seasonal movements (Barrionuevo *et al.* 2008), short periods of song activity, few vocalisations to avoid competition with more sedentary species (Girão & Albano 2010) and presence of large owls (e.g. *Pulsatrix*) that are potential predators, clumped spatial distributions (König 1999), and inaudible vocalisation at distance. The striking similarity of the voice of some species of toads to the owl's song must also be considered as another possible reason for the lack of records. These factors might also indicate that the species' population is under-estimated compared to other owls (Bodrati & Cockle 2006, Barrionuevo *et al.* 2008). Conversely, *A. harrisii* could be naturally rare. Future field work is required particularly during the supposed peak activity period of September–November (König 1999) and should focus on breeding biology, as the nest we found is only the second for the species.

The avifauna of south-east Brazil, the most developed region of the country, has suffered dramatically at human hands. Forests are now extremely fragmented, and different forms of land use have generally limited their area (Anjos 2001). Consequently, the few remnants of *cerrado* and riparian woodland should be preserved (Silveira *et al.* 2009), while efforts to protect, monitor (including via radio telemetry) and study rare species such as *A. harrisii* should be encouraged in existing conservation units. With better surveys, new data will fill gaps in the distribution of this and other poorly studied species. Moreover, compilation of all records will provide a substantial database to understand the various aspects of Buff-fronted Owl biology and habitat use.

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- Addresses:* Flávio K. Ubaid, Fábio Maffei & Reginaldo J. Donatelli, Programa de Pós Graduação em Zoologia, Instituto de Biociências de Botucatu, Universidade Estadual Paulista, CEP 18618-000, Distrito de Rubião Júnior, Botucatu, São Paulo, Brazil, e-mail: flavioubaid@yahoo.com.br. Guilherme M. Moya, Instituto Pró-Terra, Programa de Conservação da Biodiversidade, Rua Nicolau Piragine 253, Jaú, São Paulo, Brazil.